

Appl. No. 09/743,684
Amdt. Dated January 30, 2006
Reply to Office Action of July 28, 2005

Attorney Docket No. 89188.0130
Customer No.: 26021

REMARKS/ARGUMENTS

Minor changes are made to this specification to correct typographical errors and to promote consistency and clarity. Claims 7, 11, 18-23, 40, and 45 are amended. New claims 53-54 are added. Support for the amendments can be found, e.g., at page 2, line 15 – page 3, line 4; page 3, lines 16-17; page 18, lines 12-24; pages 19-20, Table 2; page 47, lines 20-29; and pages 53-56, Tables 4-8 of the specification. No new matter is introduced.

Claims 6-7, 10-11, 17-34, 36-49, and 51-54 are pending in the application, among which claims 24-28 are withdrawn from consideration. Reexamination and reconsideration of the application, as amended, are respectfully requested.

New PTO 1449 Form

Applicant filed two Form PTO 1449s on February 13, 2002 and January 23, 2003, both of which listed references C1 and C2 (references listed on Form 1449 filed February 13, 2002 are different from the references listed on Form 1449 filed on January 23, 2003). Applicant does not have any record of the IDS filed on February 3, 2003, listing references C1-C6 and C8. If the examiner has the information about those references please forward it to applicant so applicant can prepare a new PTO 1449 Form listing these references.

Claim Rejections Maintained

Claim Rejections – 35 USC § 112

Claim 7 stands rejected for lack of enablement. See the Office Action, page 5, line 8 – page 6, line 7.

Without acquiesce in the Examiner's rejection, Applicants have replaced SEQ ID NO:1 with SEQ ID NO:2 in claim 7 to reflect the correct sequence identification.

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As indicated at page 18, lines 12-24 of the specification, the amino acid sequence of prosaposin was given the sequence identifier of SEQ ID NO:1, while the amino acid sequence of Saposin B was given the sequence identifier of SEQ ID NO:2. However, these two sequence identifiers were inadvertently switched at page 3, lines 10-15; page 18, lines 2-4; and page 21, line 13 of the specification and in claim 7. Applicants have corrected these mistakes. The amendment to claim 7 is consistent with the Applicants' discovery that Saposin B, not prosaposin, has potent anti-angiogenic activity. See, e.g., page 2, lines 15-21 of the specification.

Claim 7, as amended, is directed to an isolated polypeptide consisting of an amino acid sequence which is a part of SEQ ID NO:2 (Saposin B). The polypeptide has the sequence of SEQ ID NO:28 (DVCQD) and anti-angiogenic activity, and the polypeptide is between 5 and 80 amino acids in length.

Applicants discovered that fragments of Saposin B, as small as five amino acids (e.g., DVCQD, SEQ ID NO:28) have anti-angiogenic activities. See, e.g., page 2, lines 15-21 and page 52, line 24 – page 56, line 29 of the specification. Such fragments can be obtained, e.g., from natural sources, recombinant synthesis, and chemical synthesis (page 21, line 7 – page 33, line 11 of the specification). They can be used, e.g., for treating undesired angiogenesis and tumor growth, selectively killing certain cell types, modulating cells, generate antibodies, and generating synthetic drugs with similar activities (page 20, lines 10-19 of the specification).

Claim 7 is fully enabled because the specification provides ample information as to how to make and use the claimed polypeptides. Applicants respectfully request that the rejection be withdrawn.

Claim Rejections – 35 USC § 102

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Claims 6, 11, and 17-23 remain rejected as being anticipated by Hammerstedt et al. (U.S. Patent No. 5,910,568; "568"). See the Office Action, page 6, line 9 – page 7, line 8.

Claim 11, as amended, is directed to an isolated polypeptide consisting of the sequence R-XDVCQD-R' (SEQ ID NO:45), wherein the polypeptide has anti-angiogenic activity, and wherein:

R is selected from the group consisting of Aa₁-Aa₂-Aa₃-Aa₄-Aa₅, Aa₂-Aa₃-Aa₄-Aa₅, Aa₃-Aa₄-Aa₅, Aa₄-Aa₅ and Aa₅, or is absent, wherein:

Aa₁ is glutamine;

Aa₂ is proline;

Aa₃ is lysine;

Aa₄ is aspartic acid; or

Aa₅ is asparagine; and,

X is selected from the group consisting of glycine, alanine, serine and threonine, or is absent when R is absent; and,

R' is from 0 to about 59 contiguous amino acids.

Claim 11 is not anticipated by the '568 patent because SEQ ID NO:15 of the '568 patent has 80 amino acids, whereas the length of the claimed polypeptide is between 5 and 70 amino acids. Other sequences taught by the '568 patent do not anticipate claim 11, either, because none of them starts with DVCQD or has glycine, alanine, serine, or threonine to the N-terminus of DVCQD. See, e.g., the '568 patent, columns 13-21, Sequence Listing.

Applicants respectfully submit that claim 11 is novel over the '568 patent. By the same token, claims 6 and 17-23, dependant directly or indirectly from claim 11, are not anticipated by the '568 patent, either. The rejection should be withdrawn.

New Grounds of Rejection

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Claim Rejections – 35 USC § 112

1. Claim 7 is rejected for introducing new matter. See the Office Action, page 7, line 10 – page 8, line 9.

As mentioned above, claim 7, as amended, is directed to an isolated polypeptide consisting of an amino acid sequence which is a part of SEQ ID NQ:2 (Saposin B). The polypeptide has the sequence of SEQ ID NO:28 (DVCQD) and anti-angiogenic activity, and the polypeptide is between 5 and 80 amino acids in length. The amendment renders the Examiner's rejection moot.

The specification fully describes the claimed polypeptide such that one skilled in the art would understand that, at the time the application was filed, Applicants had possession of the claimed invention. For example, the specification states that fragments of Saposin B, as small as five amino acids (e.g., DVCQD, SEQ ID NO:28) have anti-angiogenic activities (page 2, lines 15-21 and page 52, line 24 – page 56, line 29). The specification also states that the polypeptide of the invention can have a length of 5-80 amino acids (page 2, lines 22-24). Therefore, the written description requirement is met, and the rejection should be withdrawn.

2. Claims 6, 10-11, 17-23, 29-34, and 36-52 are rejected for lack of written description and introducing new matter. See the Office Action, page 8, line 10 – page 11, line 5.

Without acquiesce in the Examiner's rejection, Applicants have deleted "conservative substitution" from claim 11. Applicants have also deleted from claim 11 language with regard to Aa₁ being any amino acid if one or more of Aa₂, Aa₃, Aa₄ and Aa₅ is a specific amino acid indicated herein and the like. These amendments render the Examiner's rejection moot.

Applicants respectfully submit that the written description requirement is satisfied for claim 11, as well as for claims 6, 10, 17-23, 29-34, 36-49, and 51-52, dependent directly or indirectly from claim 11. The rejection should be withdrawn.

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3. Claims 6, 10-11, 17-23, 29-34, and 37-52 are rejected as being indefinite. See the Office Action, page 11, lines 6-12.

Without acquiesce in the Examiner's rejection, Applicants have deleted from claim 11 language such as "if one or more of Aa₂, Aa₃, Aa₄ and Aa₅ is a specific amino acid indicated herein." The amendment renders the Examiner's rejection moot.

Applicants respectfully submit that claim 11 particularly points out and distinctly claims the subject matter which Applicants regard as the invention, and therefore, is definite. By the same token, claims 6, 10, 17-23, 29-34, 36-49, and 51-52, dependent directly or indirectly from claim 11, are also definite. Withdrawn of the rejection is respectfully requested.

Claim Rejections – 35 USC § 102

Claims 11, 17-23, and 40-41 are rejected as being anticipated by O'Brien and Kishimoto (WO 95/03821, "821"). See the Office Action, page 11, line 13 – page 12, line 8.

As mentioned above, claim 11, as amended, is directed to an isolated polypeptide consisting of the sequence R-XDVCQD-R' (SEQ ID NO:45), wherein the polypeptide has anti-angiogenic activity, and wherein:

R is selected from the group consisting of Aa₁-Aa₂-Aa₃-Aa₄-Aa₅, Aa₂-Aa₃-Aa₄-Aa₅, Aa₃-Aa₄-Aa₅, Aa₄-Aa₅ and Aa₅, or is absent, wherein:

Aa₁ is glutamine;

Aa₂ is proline;

Aa₃ is lysine;

Aa₄ is aspartic acid; or

Aa₅ is asparagine; and,

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X is selected from the group consisting of glycine, alanine, serine and threonine, or is absent when R is absent; and,

R' is from 0 to about 59 contiguous amino acids.

Claim 11 is not anticipated by the '821 application because SEQ ID NO:3 of the '821 application has 523 amino acids, whereas the length of the claimed polypeptide is between 5 and 70 amino acids. Other sequences taught by the '821 application do not anticipate claim 11, either, because none of them includes DVCQD. See, e.g., the '821 application, pages 29-37, Sequence Listing.

Applicants respectfully submit that claim 11 is novel over the '821 application. By the same token, claims 17-23 and 40-41, dependant directly or indirectly from claim 11, are not anticipated by the '821 application, either. The rejection should be withdrawn.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6810 to discuss the steps necessary for placing the application in condition for allowance.

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If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,

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Date: January 30, 2006

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